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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,658	11/24/2003	Matthias Lenz	02P19659	1189
24252	7590	03/07/2006	EXAMINER	
OSRAM SYLVANIA INC 100 ENDICOTT STREET DANVERS, MA 01923			CANNING, ANTHONY J	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/718,658	Applicant(s) LENZ ET AL.	
	Examiner Anthony J. Canning	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/16/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgement of Amendment

1. The amendment to the instant application was entered on 15 December 2005.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

4. Claims 1 and 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Lierop (E.P. 0,652,587 A1) in view of Makar (U.S. 3,911,313).

5. As to claim 1, Van Lierop discloses a metal halide lamp having a ceramic discharge vessel (see Fig. 1A, item 21; page 4, column 5, lines 13-15), the discharge vessel having two ends which are closed off by stoppers (see Fig. 1A, items 25a and 25b; page 4, column 5, lines

45-51), and an electrically conductive lead through being guided through this stopper (see Fig. 1A, items 31a and 31b; page 4, column 5, lines 32-35), an electrode with a shank being secured to the lead through, which electrode projects into the interior of the discharge vessel (see Fig. 1A, items 32a and 32b; page 4, column 5, lines 32-35), the lead through and electrode together being referred to as an electrode system, wherein the electrode system includes two components (see Fig. 1A, items 32a,b and 33a,b; page 4, column 5, lines 32-35). Van Lierop fails to disclose that the two components are designed as pins of different diameter, the larger component being a niobium pin and the smaller component, which adjoins it on the inner, discharge side, being a pin made from molybdenum or tungsten which is fitted in a bore in the niobium pin, the ratio of the diameter of the smaller component to that of the Nb pin being between 30 and 65%, and an end of the smaller diameter component being positioned in the bore, and retained in the larger diameter component by mechanical tension.

Makar disclose an electrode for a metal halide lamp with two components that are designed as pins of different diameter (see Fig. 1, items 2 and 3; column 1, lines 23-30), the larger component being a niobium pin (see Fig. 1, item 2; column 1, lines 23-25) and the smaller component, which adjoins it on the inner, discharge side, being a pin made from molybdenum or tungsten (see Fig. 1, item 3; column 1, lines 26-29) which is fitted in a bore in the niobium pin (see Fig. 1, items 2 and 3; the tungsten pin is fitted inside the crimped portion of the niobium pin, column 1, lines 26-29), the ratio of the diameter of the smaller component to that of the Nb pin being between 30 and 65% (column 1, lines 23-36; the diameter of the niobium rod is 158 mil the diameter of the tungsten rod is 47 mil, the ratio of the two is very close to 30%), and an end of the smaller diameter component being positioned in the bore (column 1, lines 26-30), and

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being retained in the larger diameter component by mechanical tension (column 1, lines 30-32).

Makar further discloses that attaching the electrode to the ceramic tube with a niobium component is advantageous because the thermal expansion coefficient of niobium is similar to alumina, thereby eliminating strain due to expansion. The limitation that the pin, which has been fitted in being secured in the bore by means of mechanical tension, is not given patentable weight because it is a product-by-process limitation. A comparison of the recited process with the prior art processes does NOT serve to resolve the issue concerning patentability of the product. *In re Fessman*, 489 F2d 742, 180 USPQ 324 (CCPA 1974). Whether a product is patentable depends on whether it is known in the art or it is obvious, and is not governed by whether the process by which it is made is patentable. *In re Klug*, 333 F2d 905, 142 USPQ 161 (CCPA 1964). In an ex parte case, product-by-process claims are not construed as being limited to the product formed by the specific process recited. *In re Hirao et al.*, 535 F2d 67, 190 USPQ 15, see footnote 3 (CCPA 1976).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the metal halide lamp of Van Lierop to include that the two components are designed as pins of different diameter, the larger component being a niobium pin and the smaller component, which adjoins it on the inner, discharge side, being a pin made from molybdenum or tungsten which is fitted in a bore in the niobium pin, the ratio of the diameter of the smaller component to that of the Nb pin being between 30 and 65%, as taught by Makar, for the added benefit of attaching the electrode to the ceramic tube with a niobium component is advantageous because the thermal expansion coefficient of niobium is similar to alumina, thereby eliminating strain due to expansion.

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6. As to claim 3, Van Lierop and Makar disclose the metal halide lamp as claimed in claim 1. Makar further discloses that the smaller component is an electrode shank made from tungsten (column 1, lines 7-11, lines 14-17, lines 26-29). Makar further teaches attaching the electrode to the ceramic tube with a niobium component is advantageous because the thermal expansion coefficient of niobium is similar to alumina, thereby eliminating strain due to expansion. Tungsten electrodes are efficient discharge generators.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the metal halide lamp of Van Lierop to include that the smaller component is an electrode shank made from tungsten, as taught by Makar, for the added benefit of efficient discharge generators and advantageous because the thermal expansion coefficient of niobium is similar to alumina, thereby eliminating strain due to expansion.

7. As to claim 4, Van Lierop and Makar disclose the metal halide lamp as claimed in claim 1. Van Lierop further discloses that the smaller component is a pin made from molybdenum as the inner part of the lead through (see Fig. 1A, items 32a,b; column 5, lines 35-36; the molybdenum rod is fitted into a bore of the niobium rod and has a thicker and a thinner portion).

8. As to claim 5, Van Lierop and Makar disclose the metal halide lamp as claimed in claim 1. Van Lierop further discloses that the bore is from 0.8 to 2.5 mm deep (see Fig. 1B, item L; column 52-58; the length is at least one tenth of the circumference, which is 2.2 mm).

9. As to claim 6, Van Lierop and Makar disclose the metal halide lamp as claimed in claim 1. Makar further discloses that in terms of diameter the bore is matched to the diameter of the smaller diameter component, which the smaller diameter component is to be fitted in the bore, thereby excluding any dead volume therebetween (column 1, lines 44-50; the final product is that

the smaller diameter is fitted into the larger diameter component, then powder fills the remaining space of the larger diameter component and fired so that the bore now forms a hermetic seal with the smaller diameter portion; this means that the diameter of the bore is matched to that of the smaller diameter portion in the final product). Makar further discloses that the final product has the bore diameter matching that of the smaller diameter portion, which forms a hermetic seal between the larger diameter portion and the smaller diameter portion (column 1, lines 44-50).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the metal halide lamp of Van Lierop to include that in terms of diameter the bore is matched to the diameter of the smaller diameter component, which the smaller diameter component is to be fitted in the bore, thereby excluding any dead volume therebetween, as taught by Makar, to form a hermetic seal between the larger diameter portion and the smaller diameter portion.

10. As to claim 7, Van Lierop and Makar disclose the metal halide lamp as claimed in claim 1. Makar further discloses that the bore has an encircling wall (see Fig. 1, item 6; column 1, lines 50-54). Makar further discloses that the encircling wall is used as an enclosure (column 1, lines 50-54).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the metal halide lamp of Van Lierop to include that the bore has an encircling wall, as taught by Makar, for the benefit of the encircling wall being used as an enclosure.

11. As to claim 8, Van Lierop and Makar disclose the metal halide lamp as claimed in claim 1. Van Lierop further discloses that the bore is slotted and has at least two tongues (see Fig. 1B,

the edge portions of the niobium rod are the same as those shown in figure 2a, item 14 of the claimed invention).

Response to Arguments

12. The examiner acknowledges amendments to claims 1, 3, 4 and 6. The examiner also acknowledges the cancellation of claims 2, 9 and 10.

13. Regarding the applicant's argument that Makar '313 shows that the niobium tube has a bore diameter larger than that of the smaller diameter tungsten rod, the examiner points to column 1, lines 44-50. Here Makar '313 says that after the tungsten rod is fitted into the bore of the niobium tube, power fills the remaining void in the bore. After firing, the power forms a hermetic seal with the tungsten rod, which makes the diameter of the bore the same as the tungsten rod. Therefore, the final product of Makar '313 has a tungsten rod fitted into a bore of a niobium tube, the bore and the rod having the same diameter.

14. Van Lierop '169 discloses a portion of the structural limitations of the claims. Van Lierop's '169 abstract specifically states: "The first part (32a,b) merges into a narrowing end (34a,b) having a length L and having a circumference O at the transition, which length L is one tenth of the circumference O, while *the end (34a,b) is embedded at least partly in the end (35a,b) of the second part (33a,b).*"(emphasis added) The narrowing portion is fitted into wider end portion of the second part. While Van Lierop '169 is silent in regard to a crimping mechanism or mechanical tension to couple the end rods together, Makar '313 is not. Makar '313 specifically mentions crimping as a means of joining the tungsten rod to the niobium tube, see column 1, lines 30-32. Makar '313 discloses the mechanical tension limitation, but the

examiner does not give patentable weight to the mechanical tension limitation since it is a product-by-process limitation (see above rejection). The electrode body of Makar '313 is useful in diverse wattage lamps.

15. The examiner does not look to the design objectives of the claimed invention, but to the structural limitations in the claims, which are addressed in the body of the rejection.

Final Rejection

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information


17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Canning 

3 March 2006


ASHOK PATEL
PRIMARY EXAMINER